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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/735,775 | 12/16/2003 | Yoshihisa Usami | Q78985 | 4103 |

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EXAMINER

ANGEBRANNDT, MARTIN J

ART UNIT PAPER NUMBER

1756

DATE MAILED: 07/24/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---|-------------------------------------|--|
| Office Action Summary | Application No. 10/735,775 | Applicant(s) USAMI ET AL. | |
| | Examiner Martin J. Angebrannt | Art Unit 1756 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/16/03 & 06/30/05.
 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
 4a) Of the above claim(s) 7-20 is/are withdrawn from consideration.
 5) ☐ Claim(s) _____ is/are allowed.
 6) ☒ Claim(s) 1-6 is/are rejected.
 7) ☐ Claim(s) _____ is/are objected to.
 8) ☒ Claim(s) 1-20 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>06/30/05</u> . | 6) <input type="checkbox"/> Other: _____ |

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1. The applicant's search was **very good** in that it found most of the relevant prior art. The only deficiency, is that a fair number of references were cited which contribute little to the record in view of the other, more on point references. More extreme cases include references which are related to the metallic phase change recording media (US 2003/0081537), LC/phase separation recording media (6051289, 5747413) and a few unrelated references (EP 635685, EP 101745).

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:

I. Claims 1-6, drawn to dye based optical recording media, classified in class 430, subclass 270.15.

II. Claims 7-20, drawn to methods of recording resulting in voids of 50-250 nm or 20-95% of the thickness of the recording layer, classified in class 430, subclass 269.

The inventions are distinct, each from the other because of the following reasons:

3. Inventions group I and group II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product. See MPEP § 806.05(h). In the instant case the recording pits can be formed in sizes different from those recited in the process and the processes can be performed using media having different land (on groove) widths.

4. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

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5. Because these inventions are independent or distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

6. This application contains claims directed to the following patentably distinct species: media bearing pits with sizes of 50-250 nm and media bearing pits which are 20-95% of the thickness of the recording media. The species are independent or distinct because of the difference in recording layer thicknesses and the groove pitch, these methods only overlap for a small range of dye based media and in most cases do not overlap, so in the first case, the search is based upon the beam size, in the other, the thickness of the recording layer is the first point of analysis.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, no claims are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species. MPEP § 809.02(a).

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7. During a telephone conversation with Bruce Kramer (33,725) on July 5, 2006 a provisional election was made without traverse to prosecute the invention of group I, claims 1-6. Affirmation of this election must be made by applicant in replying to this Office action. Claims 7-20 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

8. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

9. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 2, please replace “on-groove” with - - land- -. This is the term used in the art, In figure 1, it is clear that the width being measured is that of a protrusion of the land area of the recording medium substrate. This is also described as having a height in section [0024] of the prepub. Please also change this in the specification as well.

11. The disclosure is objected to because of the following informalities: please replace “on-groove” with - - land- - and “in-groove” with - - groove- - in the specification.

Appropriate correction is required.

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12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(c) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1,4-6 are rejected under 35 U.S.C. 102(e) as being fully anticipated by Higuchi et al. '043.

Higuchi et al. '043 describe a substrate embossed to form lands which are 130 nm wide, and 80 nm high, the coating of an 20 nm Al:Ti reflective layer, a dye layer, a 5 nm silicon dioxide layer, a UV curing adhesive layer and a 95 micron thick polycarbonate film. (4/4-26). The dielectric layer can be silicon oxides, aluminum oxides, silicon nitrides, or aluminum nitrides (3/4-11).

15. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Kakuta et al. EP 1253586.

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Kakuta et al. EP 1253586 describe with respect to comparative example 13, example 18 and comparative example 16 a polycarbonate substrate with grooves formed thereon, a 100 nm Ag reflective layer, a phthalocyanine dyes based recording layer, a 5 nm ZnS-SiO₂ layer, a UV curable resins layer and a 70 micron polycarbonate sheet. [0151] In comparative example 13, the groove depth is 30 nm (this is equal to the height of the lands) and the groove width is 100 nm and the pitch 240 nm, so the lands are 140 nm in width (240nm -100 nm). In example 18, the groove depth is 30 nm (this is equal to the height of the lands) and the groove width is 200 nm and the pitch 300 nm, so the lands are 100 nm in width (300nm -100 nm). In comparative example 16, the groove depth is 30 nm (this is equal to the height of the lands) and the groove width is 220 nm and the pitch 300 nm, so the lands are 80 nm in width (300nm -220 nm).[table 5] The recording layer can include a phthalocyanine, benzotriazole, cyanine, oxanol, metallized azo dyes [0058,0082]. The cover layer can be polycarbonate or cellulose triacetate and may be 0.1-1 mm thick [0034,0106]. The grooves may be 15-45 nm deep, have pitches of 250-400 nm and widths at half heights of 60-200 nm [0057]. The intermediate layer may be SiO, SiO₂, MgF₂, SnO₂, Si₃N₄ or other inorganic substances [0107].

16. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakuta et al. EP 1253586.

It would have been obvious to one skilled in the art to modify example 18 by adding other dyes, such as oxanol, cyanine or metallized azo dye as discussed at [0082], use other intermediate layer materials, such as MgF₂, SnO₂, Si₃N₄ or SiO₂ as discussed at [0107 and/or use other cover layer materials, such as cellulose acetate as discussed at [0106] with a reasonable expectation of forming a useful optical recording medium based upon the cited text.

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17. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakuta et al. EP 1253586, in view of Kawakubo et al. '656.

Kawakubo et al. '656 teach optical recording media comprising a substrate, a reflective layer (13), a recording layer (14), a transparent protective layer (18), a UV curing resin layer and a cover layer (17). (7/38-8/31). The transparent protective layer prevents the dye from migrating from the recording layer into the adhesive layer and can be oxides, nitrides, fluoride, sulfides, etc of Mg, Al, Si, Ti, Zn, Ga, Ge, Zr, In, Sn, Sb, Ba, Hf, Ta, Sc, Y. (8/22-31).

In addition to the basis provided above, the examiner holds that it would have been obvious to modify optical recording media rendered obvious by Kakuta et al. EP 1253586 by using other inorganic materials for the intermediate layer such as nitrides or oxides of Ge or oxides of Ti with a reasonable expectation of forming a useful optical recording medium based upon the cited text and the recitation of common members for this layer within Kakuta et al. EP 1253586 and Kawakubo et al. '656.

18. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kakuta et al. EP 1271499.

Kakuta et al. EP 1271499 in examples 11-13, and 15-19 substrate where the land widths are 80 or 120 nm and the land heights are 20-100 nm [table 3], a 100 nm reflective layer, a phthalocyanine recording layer, a UV curable adhesive and a polycarbonate sheet 70 microns thick. [0213-0215]. A sputtered layer of a sulfide, oxide, or nitride of Si, Zn, Ag, Al, Ti, Sn, W, Cu, Ge, Mn, Sb, or Zr may be formed on one or both faces of the recording layer to control heat dissipation [0170-0171].

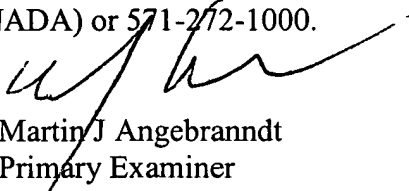
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It would have been obvious to one skilled in the art to modify any of examples 11-13 or 15-19 adding an intermediate sputtered layer, such as nitrides or oxides of Ge or Si; oxides of Ti; or sulfides of Zn as discussed at [0170-0171] with a reasonable expectation of forming a useful optical recording medium based upon the cited text.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Martin J Angebranndt
Primary Examiner
Art Unit 1756

07/19/2006